

# METHODS OF RECORDING VOICE SIGNALS IN A MOBILE SET

## CLAIMS

What is claimed is:

1. A mobile set having a voice recording means for storing voice conversations received through the mobile set and capable of playback on the mobile set, the mobile set comprising:

- (a) a uplink/downlink switch for selecting speech frames from either a uplink or downlink signal;
- (b) at least one switching logic controller for switching between the uplink and downlink signals;
- (c) a method of file header generation for generating headers for recorded speech files;
- (d) a recorder controlling means for configuring and controlling of a recorder operation in one of several modes available to a subscriber; and
- (e) a memory element.

2. A method if a mobile set for storing voice recordings, the method comprising:

- (a) controlling a processor to identify speech containing time frames from at least one uplink and at least one downlink signal; and
- (b) recording the speech containing time frames from said uplink and said downlink signals such that each time frame is recorded sequentially with a time stamp for each time frame.

3. The method as in claim 2, wherein the voice detector is a processor having a buffer for storing multiple time frames of uplink and downlink signals, and capable of assigning each time frame a logic value while sorting through signals of the same time frame.

4. A method in a mobile set for determining record worthy voice time frames, the method comprising:

- (a) receiving a first signal in a voice activity detector;
- (b) receiving a second signal in the voice activity detector;
- (c) comparing the first signal to the second signal, wherein the first and second signals have the same time stamp, and selecting the signal having a high logic value for recording; and

8 (d) substituting the low logic value signal with a placeholder marker for  
9 recording.

1 5 The method of claim 4, wherein step (d) alternatively comprises:

2 (d) Recording the low logic value signal without performing any substitution.

1 6. The method of claim 4, wherein the first voice signal is a uplink signal, and the  
2 second voice signal is a downlink signal.

1 7. The method of claim 4, wherein the first signal or the second signal contains a  
2 plurality of signals of the same type.

1 8. A computer-readable medium containing instructions for controlling a mobile set  
2 processor to record multimedia signals, comprising:

3 (a) controlling a voice activity detector to compare a plurality of voice signals  
4 having identical time stamps and arranging the voice signals such that data containing time  
5 stamp sequences are arranged sequentially into a single data file;

6 (b) controlling a processor to identify non-voice signals containing the same time  
7 stamp as data containing voice time stamp sequences; and

8 (c) sequentially recording the data containing voice signals and the corresponding  
9 time stamp non-voice signals such that both the voice and non-voice data signals are  
10 sequentially recorded into a memory element as a single data file.

1 9. The computer-readable medium of claim 8, wherein the non-voice data sequences are  
2 video data.

1 10. A computer-readable medium containing a data structure for storing voice signals  
2 comprising a conversation list containing an entry for each of one or more phone  
3 conversations, each entry comprising a single string of data records wherein each data record  
4 has a file pointer to the next record, the last record having an end of file marker, each record  
5 corresponding to at least one time stamp of the phone conversation for use in restoring the  
6 data structure to a media understandable by a user.

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- 1 11. The computer-readable medium of claim 10, wherein the data structure further  
2 comprises non-voice signals.
- 1 12. The computer-readable medium of claim 11, wherein the non-voice signals are  
2 computer readable files.
- 1 13. The computer-readable medium of claim 10, wherein the data structure is stored on a  
2 removable persistent memory element.
- 1 14. A method in a mobile set for selecting data to be stored, comprising:  
2 (a) displaying a plurality of recording modes; and  
3 (b) indicating a selection means for choosing a recording mode.
- 1 15. The method of claim 14, further comprising step (c) providing a confirmation signal  
2 after a selection means for choosing a recording mode has been selected.
- 1 16. A method in a mobile set for replaying recorded conversations, comprising:  
2 (a) displaying a line indicating a data structure of recorded conversations; and  
3 (b) in response to selection of the displayed line, replaying a recorded  
4 conversation.
- 1 17. A method in a mobile set, for replaying previously recorded conversations during a  
2 real time conversation, comprising:  
3 (a) displaying a list of data structures representing recorded conversations; and  
4 (b) in response to selection of the displayed list, replaying at least a portion of a  
5 data structure.
- 1 18. The method of claim 17, wherein the displaying of a list of data structures can be  
2 accessed during a real time subscriber conversation using the mobile set without  
3 interfering in the communication between the subscriber and a base station.
- 1 19. The method of claim 17, wherein in response to a selection of the displayed list, a  
2 portion of a previously recorded conversation may be played back and transmitted  
3 through the uplink signal.